

# D-E301NC

## SERVICE MANUAL

*US Model  
AEP Model  
UK Model*

The D-E301NC is approximately the same as the D-E301.  
Consequently, only differences between D-E301 and D-E301NC are listed.  
For other information, please refer to the D-E300AN/E301/E305/E307CK/E307CKT  
service manual (9-923-150-□□) previously issued.

### DIFFERENT PARTS LIST ACCESSORIES & PACKING MATERIALS

Page 33

<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>	<u>Remark</u>
	1-751-419-11	CORD, CONNECTION (US)	
	1-473-686-11	ADAPTOR, PLUG (DUAL)	
	3-859-283-25	MANUAL, INSTRUCTION (ENGLISH)	
	3-860-870-21	MANUAL, INSTRUCTION (ENGLISH,SPANISH, FRENCH,GERMAN,ITALIAN,PORTUGUESE, DUTCH,SWEDISH,FINISH)	
	3-861-044-11	MANUAL, INSTRUCTION (ENGLISH,FRENCH)	
	3-861-044-21	MANUAL, INSTRUCTION (AEP) (SPANISH,PORTUGUESE)	
	3-861-044-31	MANUAL, INSTRUCTION (AEP) (GERMAN,ITALIAN)	
	3-861-044-41	MANUAL, INSTRUCTION(AEP) (DUTCH,SWEDISH)	
	3-861-044-51	MANUAL, INSTRUCTION(AEP) (FINISH)	
	4-991-222-01	CASE, CARRYING	
	8-953-216-90	HEADPHONE MDR-NC05 SET	

## COMPACT DISC COMPACT PLAYER

# SONY®



# D-E300AN/E301/E305/E307CK/E307CKT

## SERVICE MANUAL



Photo : D-E301

*US Model*

D-E300AN/E301/E305/E307CK/E307CKT

*Canadian Model*

D-E300AN/E301/E307CK

*AEP Model*

*UK Model*

D-E300AN/E301/E305/E307CK

*Australian Model*

*E Model*

*Chinese Model*

D-E301/E305/E307CK

Model Name Using Similar Mechanism	NEW
CD Mechanism Type	CDM-2411AAA
Optical Pick-up Type	DAX-11A

### SPECIFICATIONS

#### System

Compact disc digital audio system

#### Laser diode properties

Material: GaAlAs

Wavelength:  $\lambda = 780 \text{ nm}$

Emission duration: Continuous

Laser output: Less than  $44.6 \mu\text{W}$  (measured at 200 mm away from the objective lens surface)

#### Error correction

Sony Super Strategy Cross Interleave Reed Solomon Code

#### D-A conversion

1-bit quartz time-axis control

#### Frequency response

20 - 20,000 Hz  $\pm 1 \text{ dB}$  (measured by EIAJ CP-307)

#### Output (at 4.5 V input level)

Headphones (stereo minijack)

15 mW + 15 mW at 16 ohms

Line output (stereo minijack)

Output level 0.7 V rms at 50 kilohms

Recommended load impedance over 10 kilohms

#### General

##### Power requirements

- Sony BP-DM10 Rechargeable battery: 2.4 V DC, Ni-Cd, 650 mAh
- Sony BP-DM20 Rechargeable battery: 2.4 V DC, Ni-MH, 1,200 mAh
- Two LR6 (size AA) batteries: 3 V DC
- AC power adaptor (DC IN 4.5 V jack):
  - US, Canadian, Central & South America model : 120V, 60Hz
  - AEP, E13 (AC220 - 230V area), Chinese model : 220 - 230V, 50Hz

UK model : 230 - 240V, 50Hz  
Saudi Arabia model : 110 - 240V, 50/60Hz  
Australian model : 240V, 50Hz  
E33 (AC100 - 240V area) model : 100 - 240V, 50/60Hz

- Sony CPM-300P mount plate for use on car battery: 4.5 V DC

#### Dimensions (w/h/d) (without projecting parts and controls)

Approx. 135 x 30.9 x 159.2 mm  
(5  $\frac{1}{8}$  x 1  $\frac{1}{4}$  x 6  $\frac{3}{8}$  in.)

#### Mass (without rechargeable battery)

Approx. 250 g (8.8 oz)

#### Operating temperature

5°C - 35°C (41°F - 95°F)

#### Supplied accessories

##### D-E300AN

Stereo headphones (1)

##### D-E301

AC power adaptor (1)

Stereo headphones (1)

Connecting cord (Phono plug x 2 ↔ stereo miniplug) (1)\*

\*Not supplied with AEP and UK model.

##### D-E305

AC power adaptor (1)

Stereo headphones with remote commander (1)\*

Stereo headphones (1)\*\*

Rechargeable battery (1)

Connecting cord (Phono plug x 2 ↔ stereo miniplug) (1)\*\*\*

Carrying case (1)\*\*\*\*

\*Not supplied with US and Central & South America model.

\*\*Supplied with US and Central & South America model.

\*\*\*Not supplied with AEP and UK model.

\*\*\*\*Supplied with US and Central & South America model.

##### D-E307CK

AC power adaptor (1)\*

Stereo headphones (1)

Connecting cord (Phono plug x 2 ↔ stereo miniplug) (1)\*\*

Car battery cord (1)

Car connecting pack (1)

Spiral tube (1)

Velcro tapes (2)

Spare fuse (1)

\*Not supplied with AEP and UK model.

\*\*Not supplied with US, AEP and UK model.

##### D-E307CKT

AC Power adaptor (1)

Stereo headphones (1)

Car battery cord (1)

Car connecting pack (1)

Spiral tube (1)

Velcro tapes (2)

Spare fuse (1)

Design and specifications are subject to change without notice.

## COMPACT DISC COMPACT PLAYER



# SONY®

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### SAFETY-RELATED COMPONENT WARNING!!

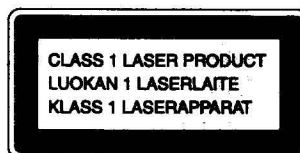
COMPONENTS IDENTIFIED BY MARK  $\Delta$  OR DOTTED LINE WITH MARK  $\Delta$  ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

### DANGER

Invisible laser radiation when open and interlock failed or defeated. Avoid direct exposure to beam.

### CAUTION

Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.



This Compact Disc player is classified as a CLASS 1 LASER product. The CLASS 1 LASER PRODUCT label is located on the bottom exterior.

### Flexible Circuit Board Repairing

- Keep the temperature of the soldering iron around 270°C during repairing.
- Do not touch the soldering iron on the same conductor of the circuit board (within 3 times).
- Be careful not to apply force on the conductor when soldering or unsoldering.

### Notes on chip component replacement

- Never reuse a disconnected chip component.
- Notice that the minus side of a tantalum capacitor may be damaged by heat.

### ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!

LES COMPOSANTS IDENTIFIÉS PAR UNE MARQUE  $\Delta$  SUR LES DIAGRAMMES SCHÉMATIQUES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈCES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPLÉMENTS PUBLIÉS PAR SONY.

## SECTION 1 SERVICING NOTES

### NOTES ON HANDLING THE OPTICAL PICK-UP BLOCK OR BASE UNIT

The laser diode in the optical pick-up block may suffer electrostatic breakdown because of the potential difference generated by the charged electrostatic load, etc. on clothing and the human body. During repair, pay attention to electrostatic breakdown and also use the procedure in the printed matter which is included in the repair parts. The flexible board is easily damaged and should be handled with care.

### NOTES ON LASER DIODE EMISSION CHECK

The laser beam on this model is concentrated so as to be focused on the disc reflective surface by the objective lens in the optical pick-up block. Therefore, when checking the laser diode emission, observe from more than 30cm away from the objective lens.

### Before Replacing the Optical pick-up Block

Please be sure to check thoroughly the parameters as per the "Optical pick-up Block Checking Procedure" (Part No. : 9-960-027-11) issued separately before replacing the optical Pick-up block. Note and specifications required to check are given below.

- FOK output : IC501 ⑫ pin  
When checking FOK, remove the lead wire to disc motor.
- S curve P-to-P value :  $1.2 \pm 0.3$ Vp-p IC501 ⑪ pin.  
When checking S curve P-to-P value, remove the lead wire to disc motor.
- Adjusted part for focus gain adjustment : RV503
- RF signal P-to-P value : 0.8 – 1.2Vp-p
- Traverse signal P-to-P value : 1.0 – 2.4Vp-p
- The repairing grating holder is impossible.
- Adjusted part for tracking gain adjustment : RV502

### Precautions for Checking Emission of Laser Diode

Laser light of the equipment is focused by the object lens in the optical pick-up so that the light focuses on the reflection surface of the disc. Therefore, be sure to keep your eyes more than 30cm apart from the object lens when you check the emission of laser diode.

### Laser Diode Checking Methods

During normal operation of the equipment, emission of the laser diode is prohibited unless the upper panel is closed while turning ON the S801 (push switch type).

The following two checking methods for the laser diode are operable.

#### Method-1 (In the service mode or normal operation) :

##### Emission of the laser diode is visually checked.

1. Open the upper lid.
2. Push the S801 as shown in Fig. 1 .
3. Check the object lens for confirming normal emission of the laser diode. If not emitting, there is a trouble in the automatic power control circuit or the optical pick-up. During normal operation, the laser diode is turned ON about 2.5 seconds for focus searching.

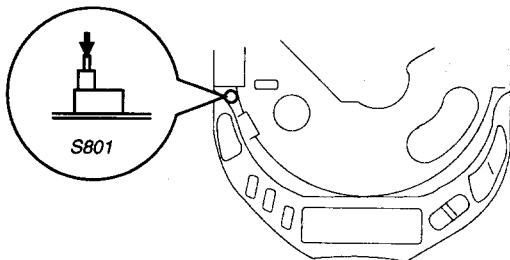
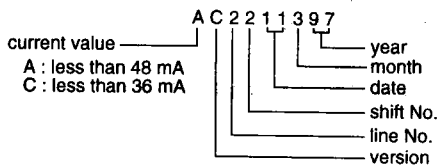


Fig.1 Method to push S801

#### Method-2 (In the service mode or normal operation) :

##### Check the value of current flowing in the laser diode.

1. Remove the upper panel.
2. Read the current printed on the rear side of the optical pick-up.  
(Print on the rear side of the optical pick-up)



3. Connect a level meter as shown in Fig. 2
4. Press the ►||key.
5. Calculate the current value by the reading of the VOM .  
Reading of the tester (V) + 4.7 ( Ω ) = current value (A)  
(Example) Reading of the VOM of 0.2256 V :  
 $0.2256 \text{ V} + 4.7 \text{ } \Omega = 0.048 \text{ (A)} = 48 \text{ mA}$

6. Check that the current value is within the following range.

• Current value of the label  $\pm 5_{11}$  mA(25°C)

Variation by temperature : 0.4mA / °C

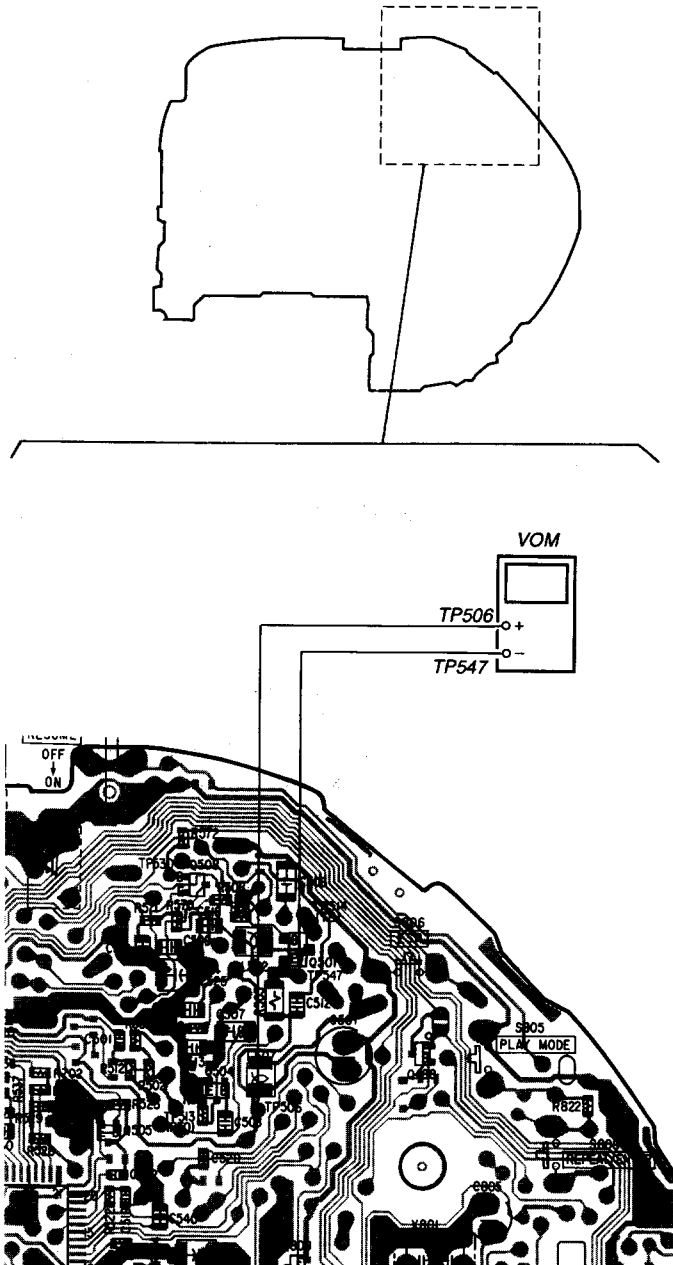
Current increases with temperature increased.

Current decreases with temperature decreased.

If the current is more than the range above, there is a trouble in the automatic power control circuit or the laser diode is in deterioration.

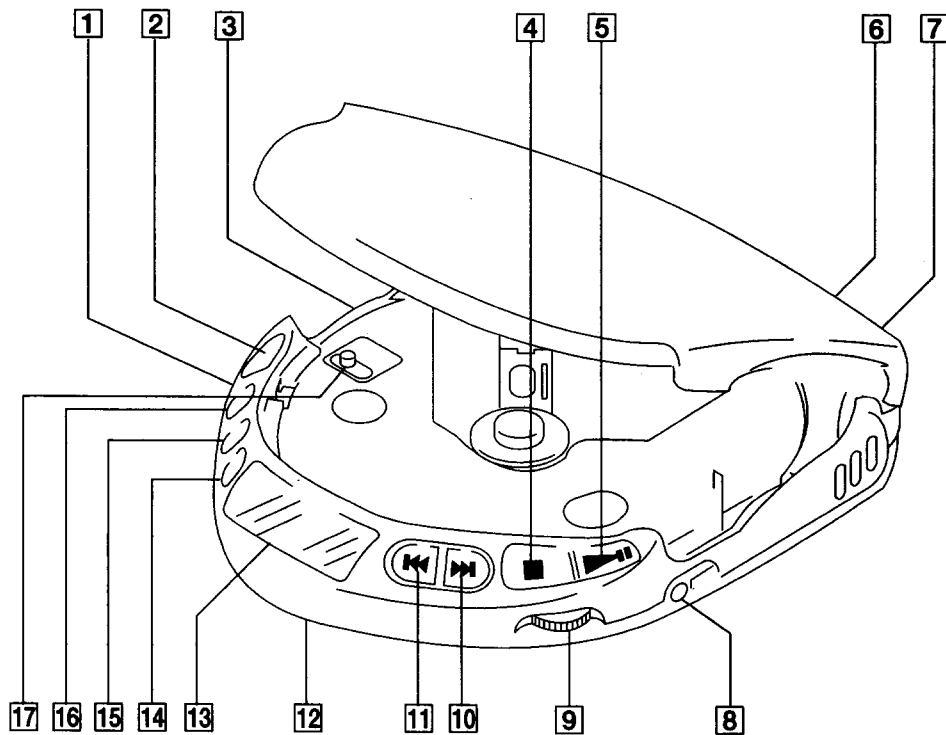
If less than the range, a trouble exists in the automatic power control circuit or the optical pick-up.

#### [MAIN BOARD] (Conductor side)



## SECTION 2 GENERAL

### LOCATION AND FUNCTION OF CONTROLS



- |                                   |  |
|-----------------------------------|--|
| <b>1</b> HOLD switch              | <b>10</b> ►► FF button                             |
| <b>2</b> OPEN button              | <b>11</b> ◀◀ FR button                             |
| <b>3</b> DIGITAL MEGA BASS button | <b>12</b> AVLS switch                              |
| <b>4</b> ■ STOP button            | <b>13</b> Information display panel                |
| <b>5</b> ►   Play/pause button    | <b>14</b> REPEAT/ENTER button                      |
| <b>6</b> DC IN 4.5V jack          | <b>15</b> PLAY MODE button                         |
| <b>7</b> LINE OUT jack            | <b>16</b> ESP (Electronic Shock Protection) button |
| <b>8</b> ⏻/REMOTE jack            | <b>17</b> RESUME switch                            |
| <b>9</b> VOLUME control           |  |

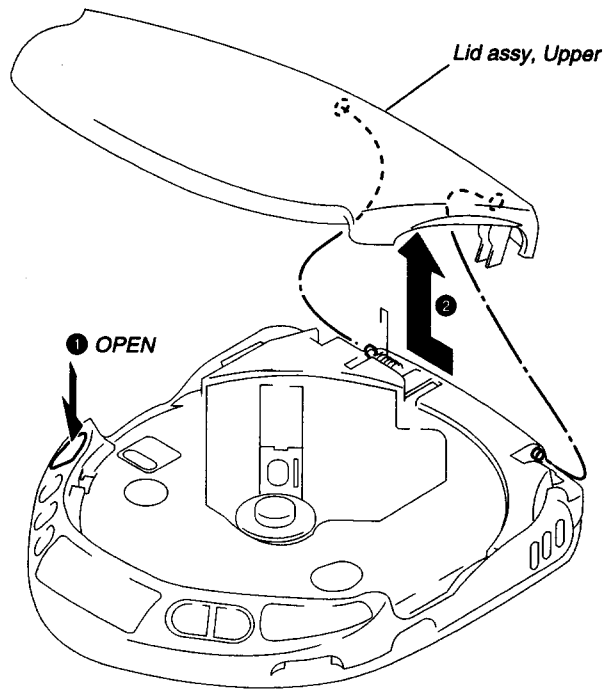
## SECTION 3 DISASSEMBLY

- The equipment can be removed using the following procedure.

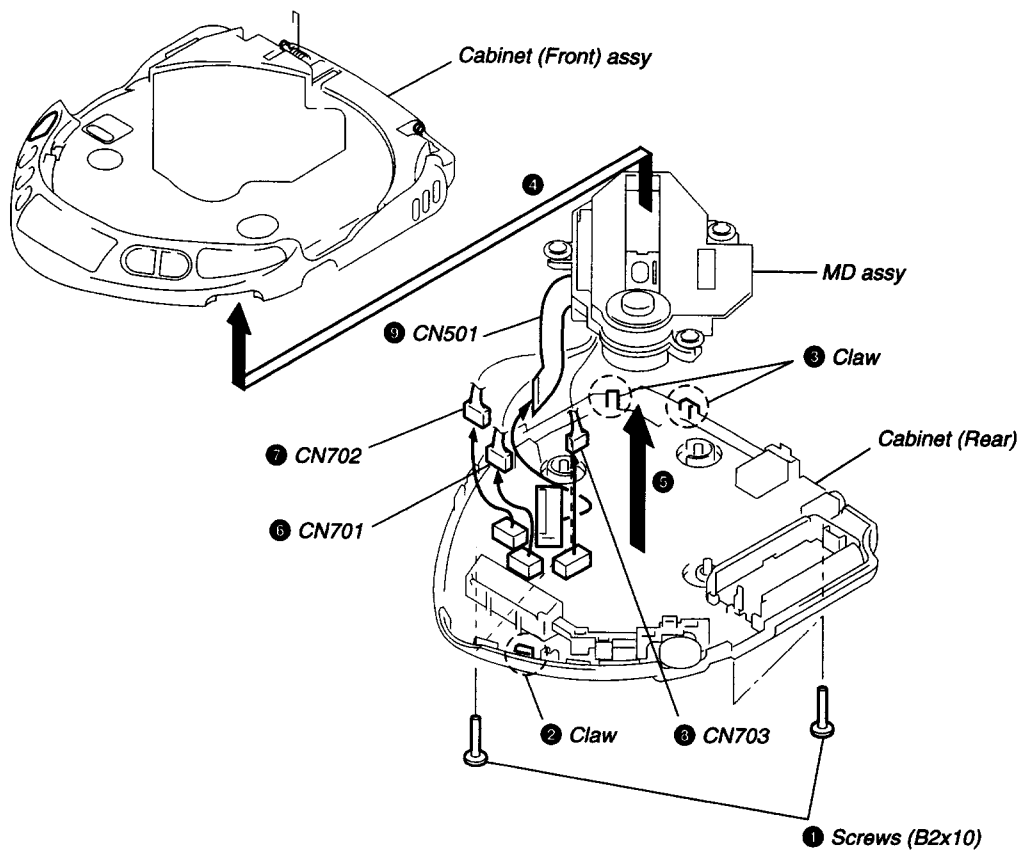
Set → Lid assy, Upper  
→ Cabinet (Front) assy → MD assy → Main board

**Note** : Follow the disassembly procedure in the numerical order given.

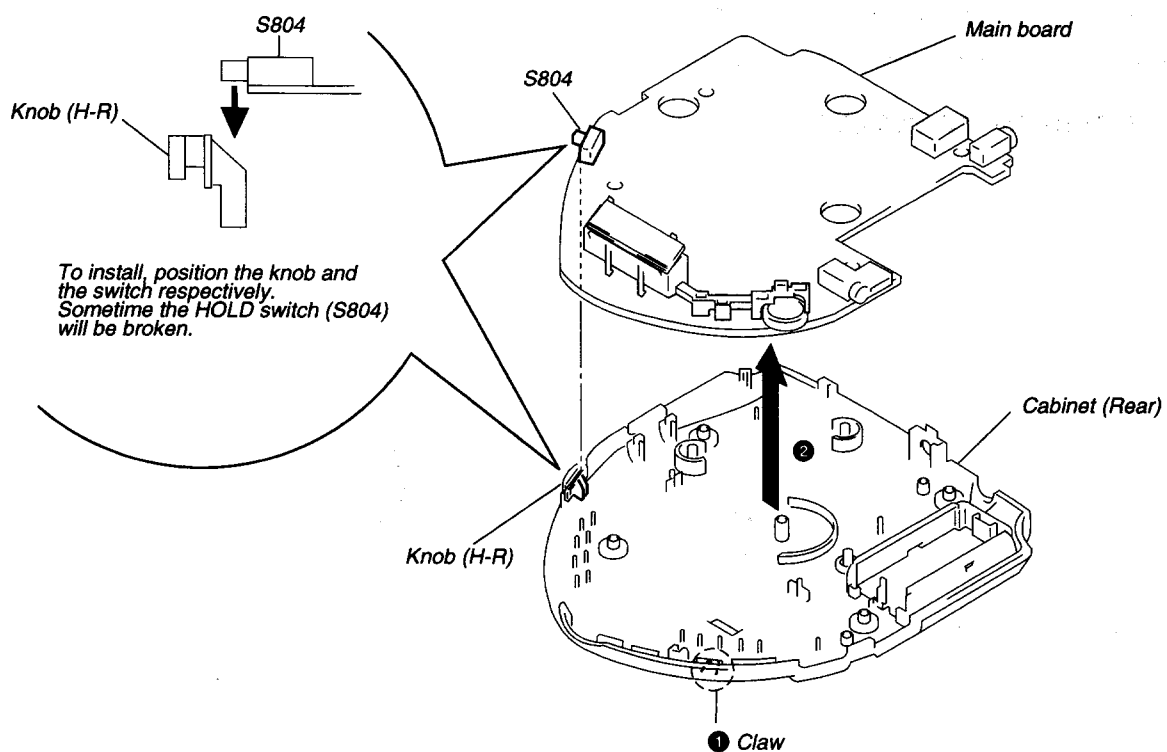
### 3-1. LID ASSY, UPPER REMOVAL



### 3-2. CABINET (FRONT) ASSY, MD ASSY REMOVAL



### 3-3. MAIN BOARD REMOVAL



## SECTION 4

### SERVICE MODE

#### Service Mode (service program)

The equipment is provided with a service program built in the microcomputer, like conventional models.

Service program operation methods are described in the following.

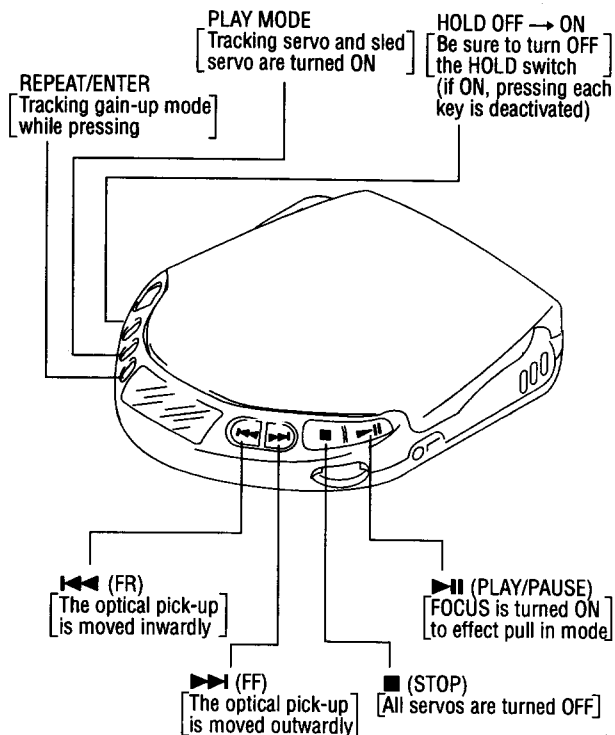


Fig. 3 Layout of each key

#### • Step 1 (Service mode setting method)

1. Turn OFF the HOLD switch the external power supply disconnected (power is not applied to the set).
2. Solder across the TAP802 (TEST) terminals (pin ⑤2, IC801 (TEST) is grounded).
3. Connect an external power supply.  
Thus, the set is switched to the service mode.

#### • Step 2 (Operation in the service mode)

1. Once the service mode is effected, the LCD displays 5 indications each of which is repeatedly displayed.  
However, the following operations can be activated even if LCD indication is effected.
2. By pressing the ▶▶ or ◀◀ key, the optical pick-up movable inwardly or outwardly. However, if this is activated, tracking servo and sled servo are turned OFF, so it can be turned ON by pressing the PLAY MODE key, if required.
3. By pressing the REPEAT/ENTER key, the tracking gain-up mode becomes active.
4. By pressing the ▶▶ key, focus is turned ON from focus searching while entering CLV-S (pull-in mode).  
Without disc, focus searching is repeated continuously.
5. By pressing the PLAY MODE key, tracking servo, sled servo and CLV-A (servo in PLAY) are turned ON.
6. When 4. and 5. are performed, playing begins. No muting is ON in the service mode.
7. By pressing the ■ key, all servos (focus tracking and sled) are turned OFF. However, the disc motor revolves for a while by inertia.

#### • Step 3 (Resetting service mode)

1. Be sure to disconnect the external power supply and remove the solder bridge at the TEST terminals connected in setting.
2. The set thus becomes available for normal operation.

#### – MAIN BOARD – (component side)

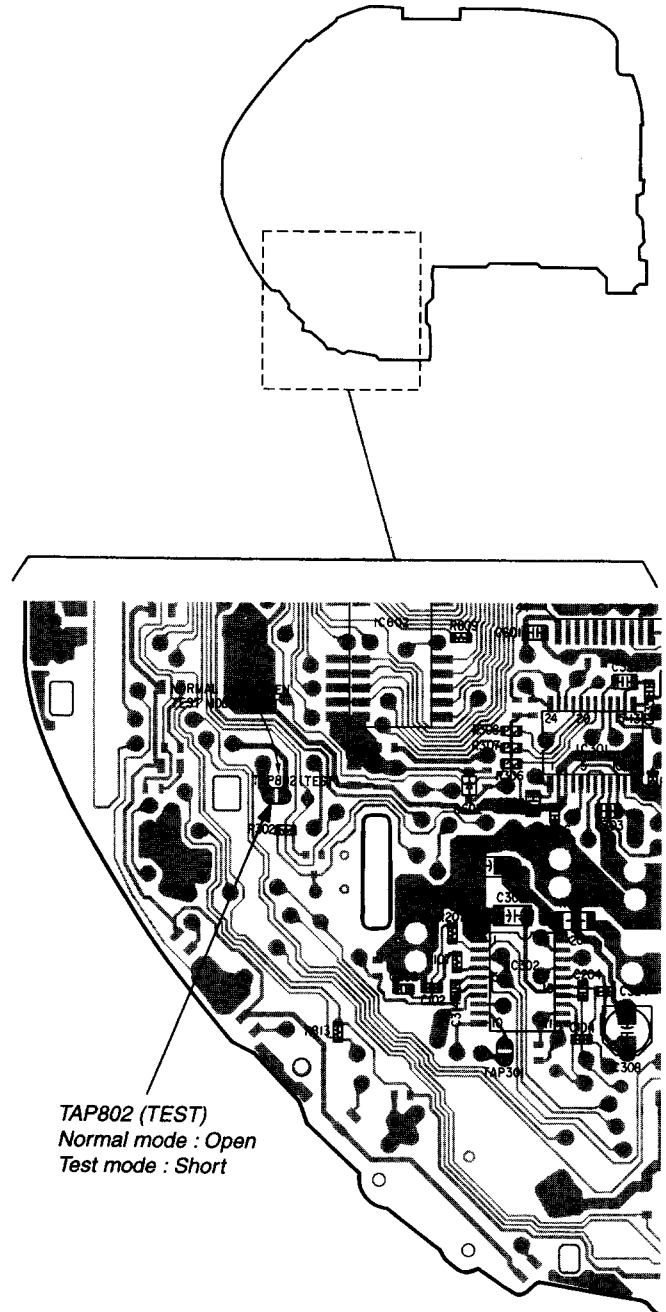


Fig. 4 Location of test terminal



## SECTION 5 ADJUSTMENTS

### CD SECTION

#### Precautions for Adjustment

1. Before beginning adjustment, set the equipment to service mode.  
After the completion of adjustment, be sure to reset the service mode.

For more information, see "Service Mode (service program)" on page 7.

2. Perform adjustments in the order given.
3. Use the disc (YEDS-18, Part No. 3-702-101-01) unless otherwise indicated.
4. Power supply voltage requirement : DC 4.5 V  

HOLD switch	: OFF
VOLUME	: Minimum
BASS BOOST switch	: OFF
AVLS switch	: NORM

#### Before Beginning Adjustment

Set the equipment to service mode (See page 7) and check the following.

If there is an error, repair the equipment.

#### • Checking of the sled motor

1. Open the upper panel.
2. Press the ►► and ◄◄ keys and check that the optical pick-up can move smoothly without sluggishness or abnormal noise in innermost periphery → outermost periphery → innermost periphery  
 ►► : The optical pick-up moves outwardly  
 ◄◄ : The optical pick-up moves inwardly

#### • Checking of focus searching

1. Open the upper panel.
2. Press the ►► key. (Focus searching operation is activated continuously).
3. Check the object lens of the optical pick-up for smooth up/down motion without sluggishness or abnormal noise.
4. Press the ■ key.  
Check that focus searching operation is deactivated. If not, again press the ■ key slightly longer.

#### Tracking Balance Adjustment

##### Condition :

- Hold the set in horizontal state.

##### Procedure :

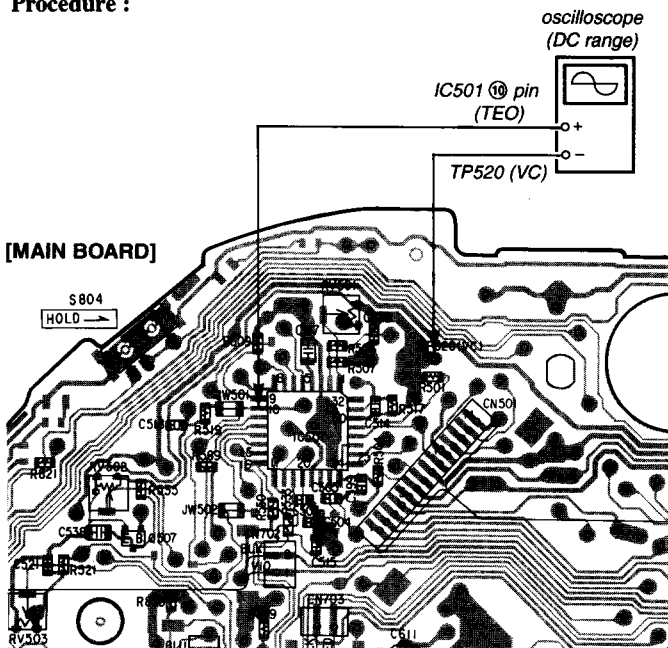


Fig. 5

#### [MAIN BOARD] (Conductor side)

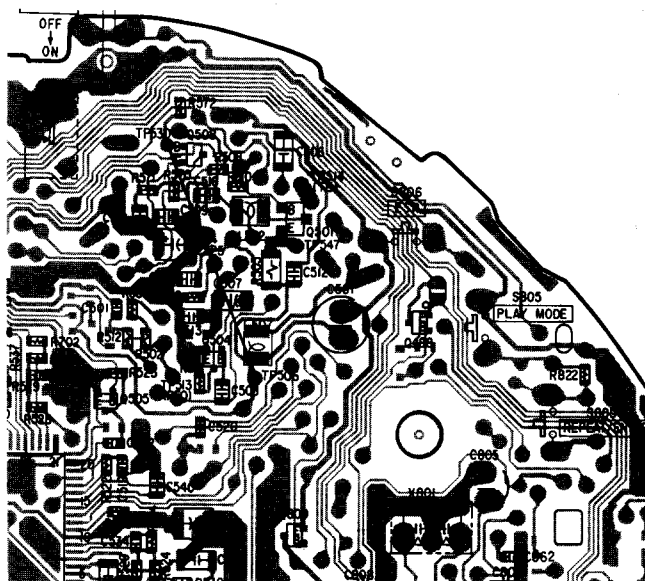
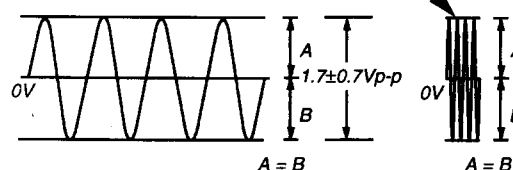


Fig. 6

1. Connect the oscilloscope between IC501 ⑩ pin (TEO) and TP520 (VC) on the MAIN board as shown in Fig. 5.
2. Connect the lead wire between TP530 (Q508, Base) and TP506 (Vcc : IC501 ⑫ pin) as shown in Fig. 6.
3. Set the equipment to service mode stop state (See page 7).
4. Move the optical pick-up by Pressing the ►► and ◄◄ keys.
5. Put the disc (YEDS-18).
6. Press the ►► key.  
 (From focus searching, focus is turned ON while entering CLV drawing-in mode. Tracking and sled are turned OFF.)
7. Adjust RV501 so that the waveform on the oscilloscope becomes up/down symmetrical with an axis of 0V.

Note : Take Long sweep time for easy monitoring



8. Stop removing of the motor by pressing the ■ key.
9. After the completion of adjustment, reset service mode. (See page 7)

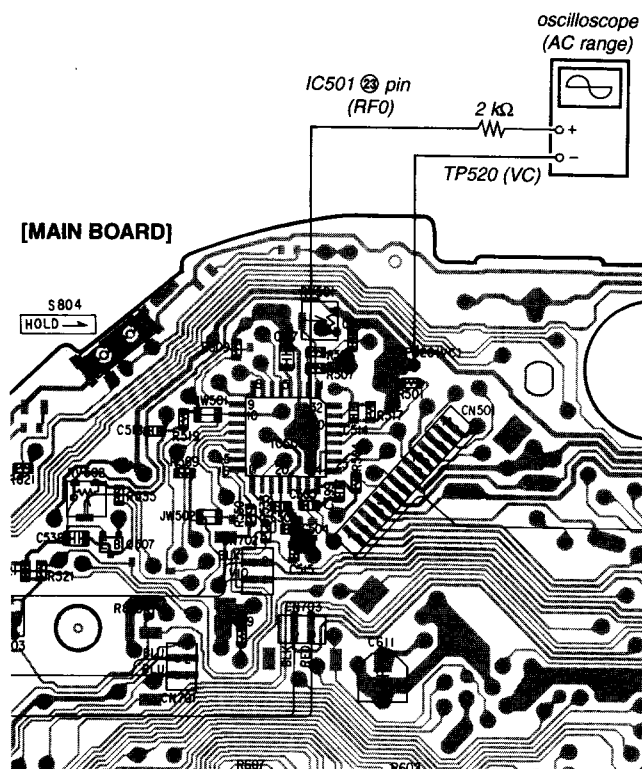
Adjustment Location : Main board (page 10)

## Focus Bias Check

### Condition :

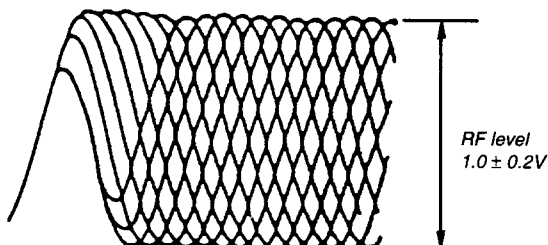
- Hold the set in horizontal state.

### Procedure :



1. Set the equipment to service mode stop state (See page 7).
2. Connect the oscilloscope between IC501 pin (RF0) and TP520 (VC) on the MAIN board.
3. Move the optical pick-up by Pressing the ►► and ◄◄ keys.
4. Put the disc (YEDS-18).
5. Press the ►► key.  
(From focus searching, focus is turned ON while entering CLV drawing-in mode. Tracking and sled are turned OFF.)
6. Press the PLAY MODE key. (Both tracking and sled are turned ON).
7. Check the oscilloscope waveform is as shown below.  
A good eye pattern means that the diamond shape (◊) in the center of the waveform can be clearly distinguished.

VOLT DIV : 200mV (with the 10 : 1 probe in use)  
TIME DIV : 500ns



### • RF Signal Reference Waveform (eye pattern)

To watch the eye pattern, set the oscilloscope to AC range and increase the vertical sensitivity of the oscilloscope for easy watching.

8. Stop removing of the motor by pressing the ■ key.
9. After the completion of adjustment, reset service mode.  
(See page 7)

## Focus/Tracking Gain Adjustment

A servo analyzer is necessary in order to perform this adjustment exactly.

However, this gain has a margin, so even if it is slightly off, there is no problem. Therefore, do not perform this adjustment.

Focus/tracking gain determines the pick-up follow-up relative to mechanical noise and mechanical shock when the 2-axis device operate. However, as these reciprocate, the adjustment is at the point where both are satisfied.

- When gain is raised, the noise when 2-axis device operates increases.
- When gain is lowered, it is more susceptible to mechanical shock and skipping occurs more easily.

This adjustment has to be performed upon replacing any of the following parts :

- Optical pick-up
- RV503 (Focus gain)
- RV502 (Tracking gain)

Normally, be sure not to move RV503 (focus gain) and RV502 (tracking gain).

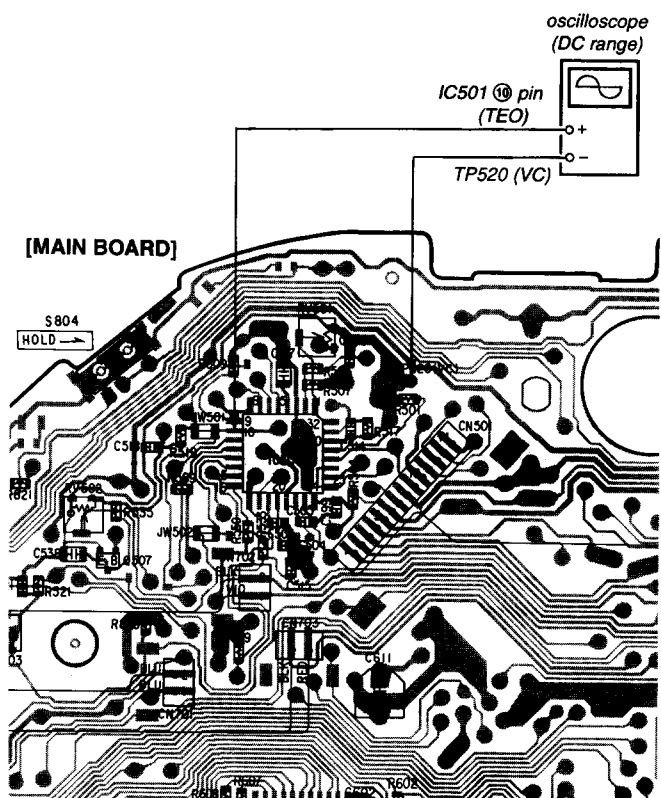
### – Focus Gain Adjustment –

#### Procedure :

This adjustment is not performed. If focus gain RV503 is turned, set to mechanical center

### – Tracking Gain Adjustment –

(perform at normal operation)



1. Place the optical pick-up level, horizontally. (If the optical pick-up is not level, the 2-axis device will be weighted and adjustment cannot be done.)
2. Connect the oscilloscope between IC501 ⑩ pin (TEO) and TP520 (VC) on the MAIN board.
3. Set the disc (YEDS-18) and Press the▶▶ (▶▶▶) key.
4. Turn RV502 slightly clockwise (tracking gain drops) and obtain a waveform with a fundamental wave (waveform has large waves) as in Figure 1.
5. Turn RV502 slowly counterclockwise (tracking gain rises) until the fundamental wave disappears (no large waves) as in Figure 2.
6. Set RV502 to the position about 30 ° counterclockwise from the position obtained in step 5. If RV502 contact point is more than 90 ° counterclockwise from mechanical center, tracking gain is too high. In this case, readjust from step 4.
7. Press ▶▶ (▶▶▶) or ◀◀ (◀◀◀) keys and observe the 100 track jump waveform. Check that no traverse waveform appears for both ▶▶ (▶▶▶) or ◀◀ (◀◀◀) directions. (See Figures 3 and 4.) It is acceptable if the traverse waveform appears only now and then, but if it appears constantly raise tracking gain slightly and check step 7 again.
8. Check that there is not abnormal amount of operation noise (white noise) from the 2-axis device. If there is, tracking gain is too high, readjust starting with step 4.

The waveforms are those measured with the oscilloscope set as shown below.

- VOLT/DIV : 50mV
- TIME/DIV : 5mS
- Waveform when tracking gain lowered.  
Fundamental wave appears (large waves).



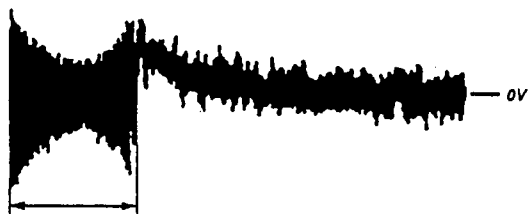
**Fig. 1**

- Waveform when fundamental wave disappears (no large waves).



**Fig. 2**

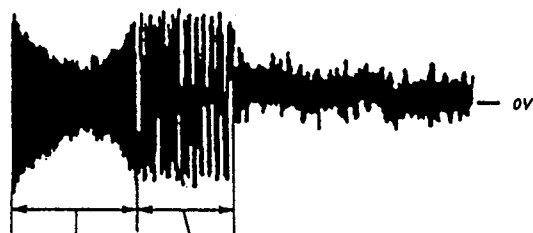
- Waveform when no traverse waveform during 100 track jump.  
(Brake application is smooth because of adjustment.)



100 track jump waveform

**Fig. 3**

- Waveform when no traverse waveform during 100 track jump.  
(Brake application is poor because of adjustment.)

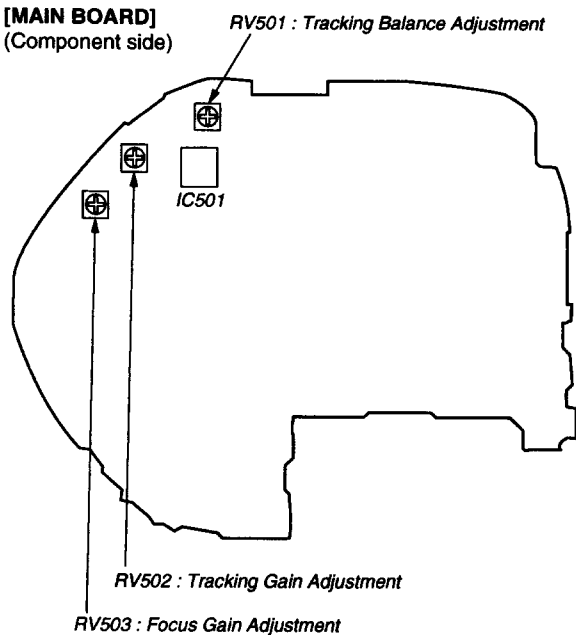


100 track jump waveform  
traverse waveform

**Fig. 4**

#### Adjustment Location :

[MAIN BOARD]  
(Component side)



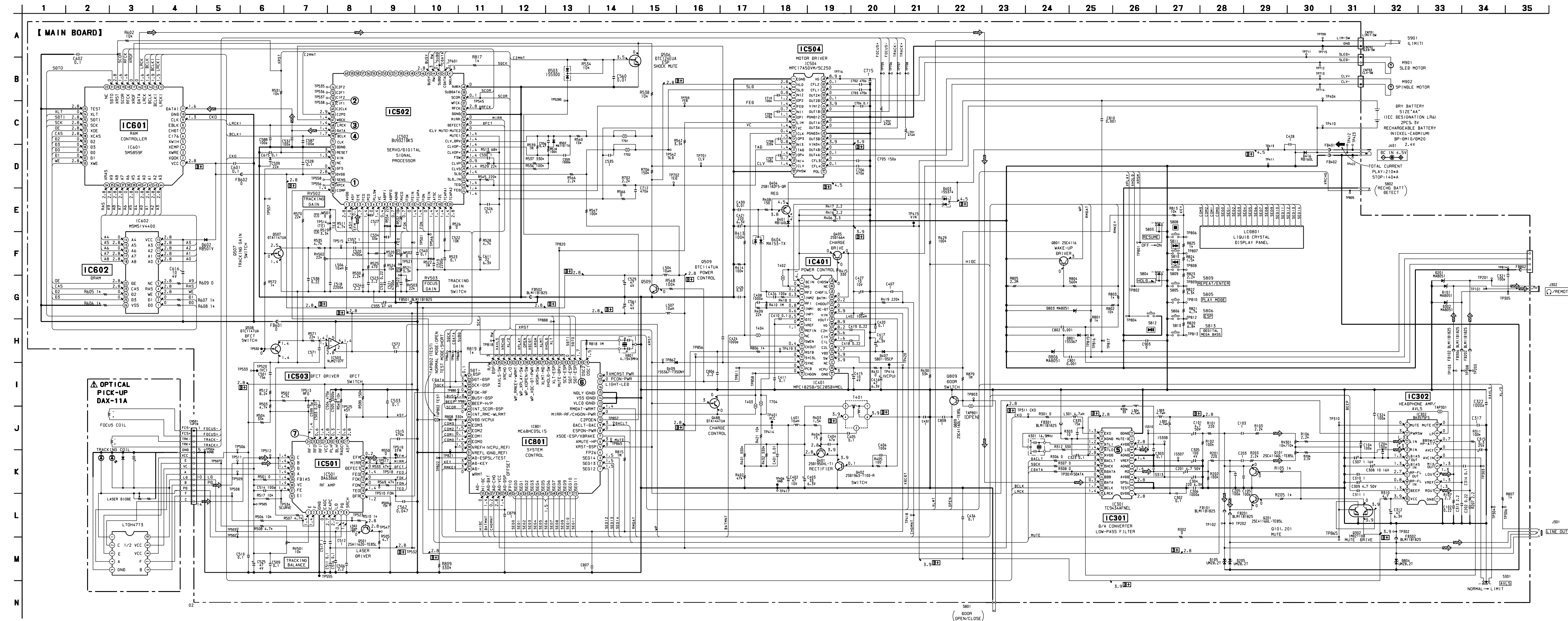
## SECTION 6

### EXPLANATION OF IC TERMINALS

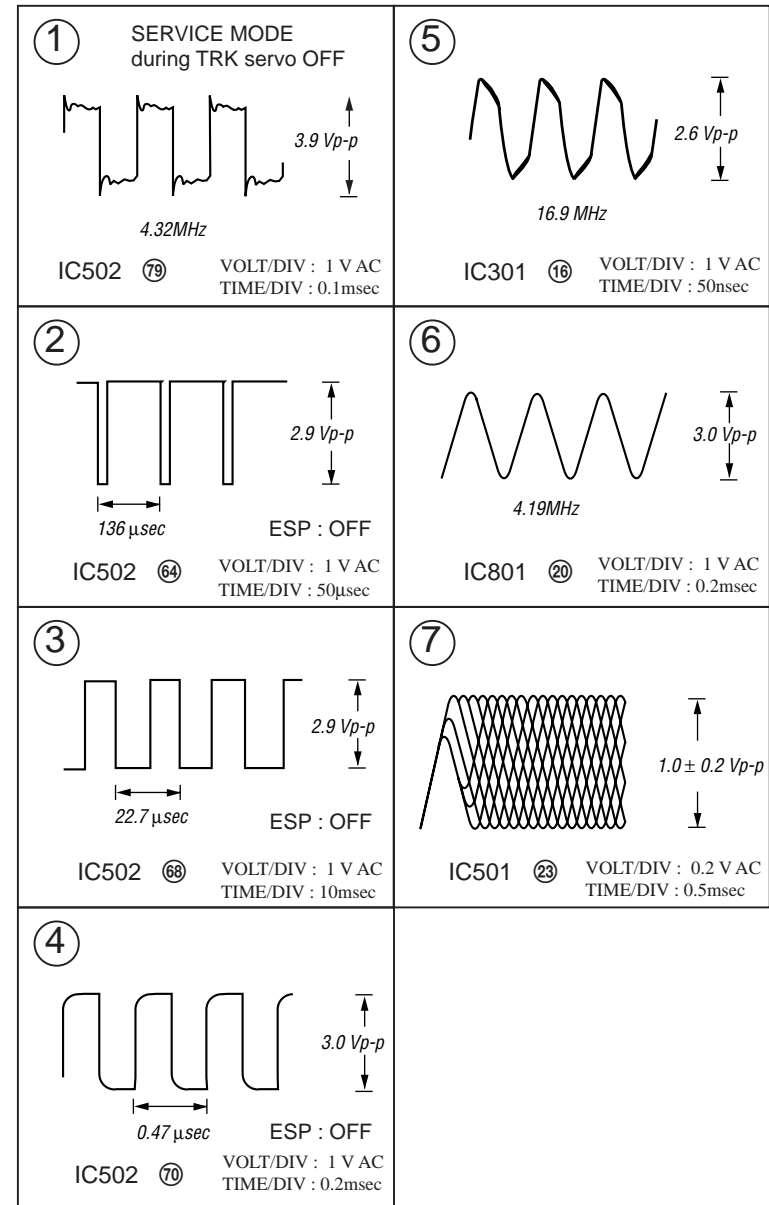
#### IC801 MC68HC05L15SC442705CPB (SYSTEM CONTROL)

Pin No.	Pin name	I/O	Description
1 – 3	SEG 12–14	O	LCD segment signal output terminal.
4	FP26	–	Not used (Open).
5	XRST–DSP	O	Reset output terminal.
6	AMUTE –HP	O	Audio mute output terminal.
7	XSOE –ESP/XBRAKE	–	Not used (Open).
8	ESPO–PWE	O	ESP POWER ON control output.
9	DACL–DAC	I/O	CPU serial data input, latch signal output (For DAC only).
10	C2POEN	O	C2PO signal control output. “L” : stop “H” : searching
11	MIRR–RF/CHGON–PWR	I	Charge ON signal input terminal.
12	RMDAT–WRMT	O	Serial data output to LCD remote controller.
13	VLCD (GND)	–	Connect to ground.
14	VSS (GND)	–	Connect to ground.
15	NDLY (GND)	–	Connect to ground.
16	LIGHT–LED	–	Not used (Open).
17	PCON–PWR	O	Power ON/OFF control output. “L” : ON “H” : OFF
18	XMCRST–PWR	I	System reset input terminal.
19	OSC 1	I	System clock oscillator input terminal (4.1943 MHz).
20	OSC 2	O	System clock oscillator output terminal (4.1943 MHz).
21	SDT–ESP	I	Serial data input from ESP control (IC601).
22	SDT–ESP	O	Serial data output to ESP control (IC601).
23	SCK–ESP	O	Serial clock output to ESP control (IC601).
24	MUTE–DRV	O	Motor drive mute output terminal.
25	XLT–ESP	O	Latch signal output to ESP control (IC601).
26	HOLD–SW	I	Hold switch input terminal. “L” : HOLD ON “H” : HOLD OFF
27	XLMT–MD	I	Limit switch input terminal. “L” : Inside Track
28	XRSM–SW	I	RESUME switch input terminal. “L” : ON “H” : OFF
29	WP XDC–DT PWR	I	DC in voltage detection terminal.
30	WP XOPEN–SW	I	Door open switch input terminal. “L” : Close “H” : Open
31	WP XPLAY–SW	I	Play/pause key input terminal.
32	WP RMKEY WRMT	I	Remote control key input terminal.
33	XL/O DCT	I	LINE OUT jack detection terminal. “L” : Present “H” : No
34	XRCHG–SW	I	Rechargeable battery detection terminal. “L” : Present “H” : No
35	XAVLS–SW	I	AVLS switch input terminal.
36	R/W DSP	O	Read/Write switching signal output terminal. “L” : Read “H” : Write
37	SDT–DSP	I	SUB–Q signal input terminal.
38	SDT–DSP	O	Serial data output to DSP (IC502).
39	SCK–DSP	O	Clock signal to enter SUB–Q signal form DSP (IC502).
40	FOK–RF	I	FOK signal input terminal.

Pin No.	Pin name	I/O	Description
41	BUSY-DSP	I	BUSY signal input terminal from DSP (IC502).
42	BEEP-HP	O	Beep sound output terminal.
43	INT SCOR-DSP	I	Sub code sync SO+SI input terminal.
44	INT RMC-WLRMT	-	Not used (Open).
45	V <sub>DD</sub> (VCPU)	-	Power supply terminal.
46 - 49	COM 0-3	O	LCD common signal output terminal.
50	VREFH	I	Reference voltage input terminal (connect to V <sub>DD</sub> ).
51	VREFL	-	Connect to ground.
52	AD ESPSL/TEST	I	Test mode terminal. "L" : Test mode "H" : Nomal mode
53	AD-KEY	I	A/D input terminal for main unit key.
54	AD-WRMT	I	A/D input terminal for remote control key.
55	AD-HI DC	I	A/D input terminal for DC IN voltage detection.
56	AD - BAT	I	Rechavgeable battery/dry cell detection input.
57	AD - CHG	I	A/D input terminal for charging voltage monitor.
58	AD - VCC	I	A/D input terminal for VCC voltage monitor.
59	AD - DSP OFFSET	I	A/D input terminal for DSP off-set monitor.
60	FP10	-	Not used (Open).
61 - 72	SEG 0 - 11	O	LCD segment signal output terminal.



## WAVEFORMS



## Note:

- All capacitors are in  $\mu\text{F}$  unless otherwise noted.  $\text{pF}$ :  $\mu\text{F}$
- 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in  $\Omega$  and  $\frac{1}{2}\text{W}$  or less unless otherwise specified.
- $\Delta$ : internal component.
- Power voltage is dc 4.5 V and fed with regulated dc power supply from external power voltage jack (J401).
- Voltage and waveforms are dc with respect to ground under no-signal conditions.
- ( ) : PLAY
- Waveforms are taken with a VOM (Input impedance 10M $\Omega$ ). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with an oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Signal path.
- $\Rightarrow$  : CD

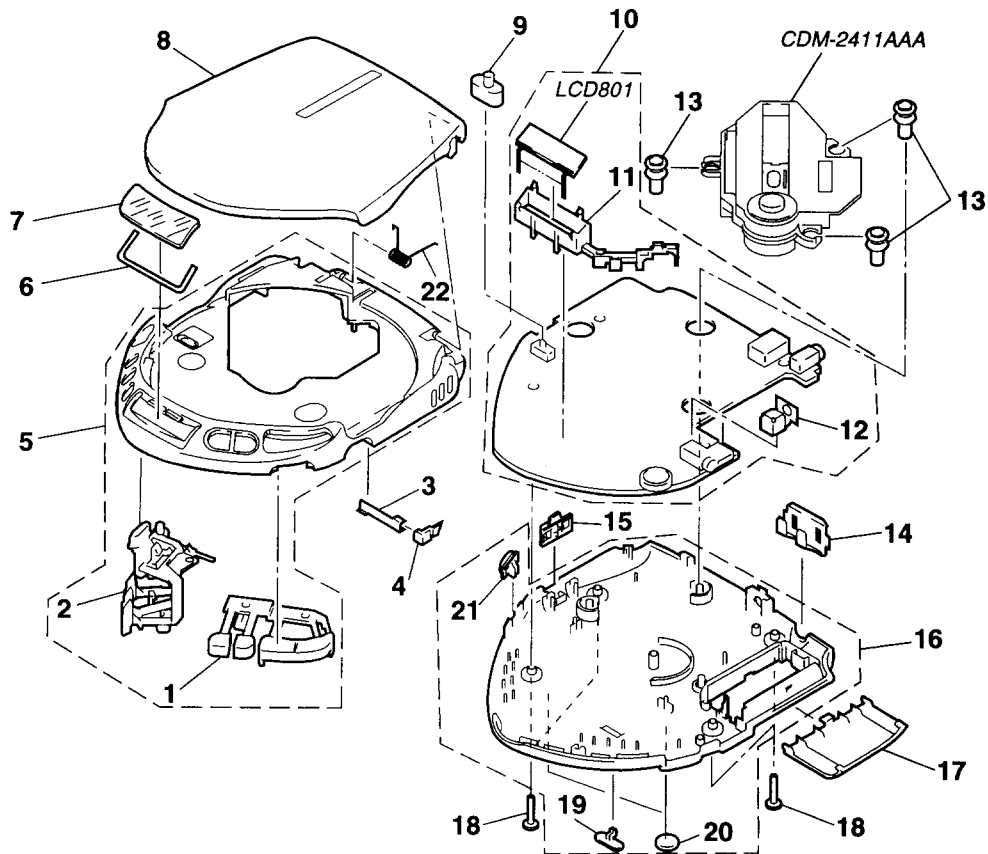
## Note:

The components identified by mark  $\Delta$  or dotted line with mark  $\Delta$  are critical for safety. Replace only with part number specified.

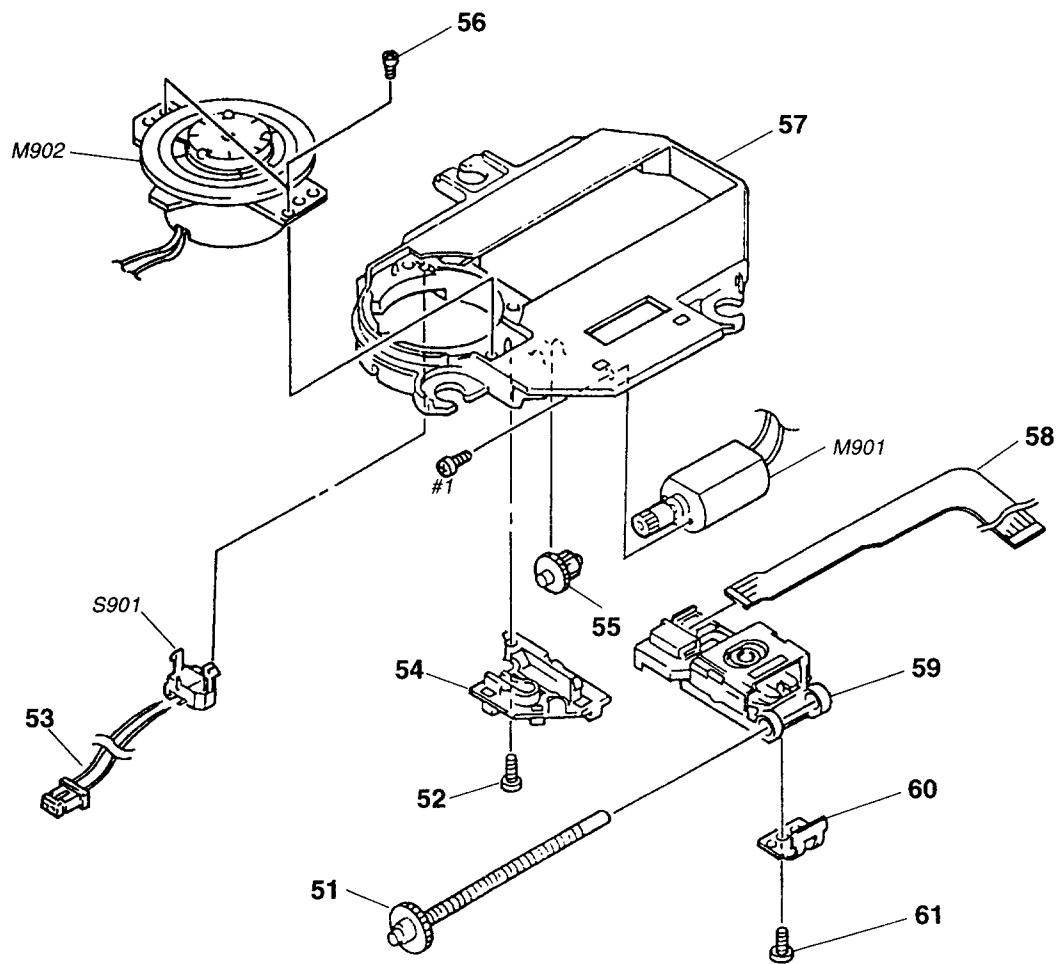
## Note:

Les composants identifiés par une marque  $\Delta$  sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

## 8-1. CABINET SECTION



**8-2.OPTICAL PICK-UP SECTION  
(CDM-2411AAA)**





# D-E300AN/E301/E305/ E307CK/E307CKT

**SONY.**

## SERVICE MANUAL

*US Model*

*D-E300AN/E301/E305/E307CK/E307CKT*

*Canadian Model*

*D-E300AN/E301/E307CK*

*AEP Model*

*UK Model*

*D-E300AN/E301/E305/E307CK*

*Australian Model*

*E Model*

*Chinese Model*

*D-E301/E305/E307CK*

## SUPPLEMENT - 1

File this Supplement with the Service Manual.

**Subject :**

- **CHANGE OF MAIN BOARD.**
- **EXPLODED VIEWS.**

(ECN-CD750459)

● **CHANGE OF MAIN BOARD**

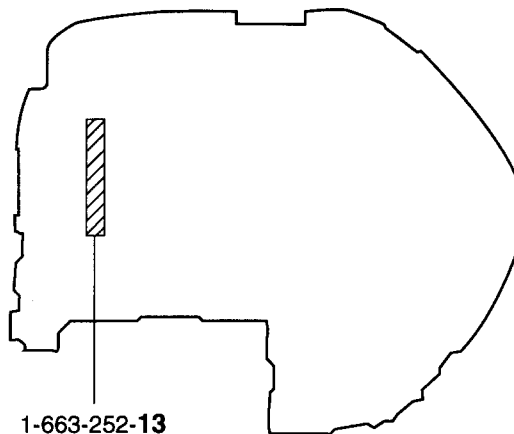
The main board have been changed.

Printed wiring board and schematic diagram of new type, and changed parts list are described in this Supplement-1.

Refer to original service manual (9-923-150-11) previously issued for the other information.

**NEW TYPE IDENTIFICATION**

[MAIN BOARD] (Side B)

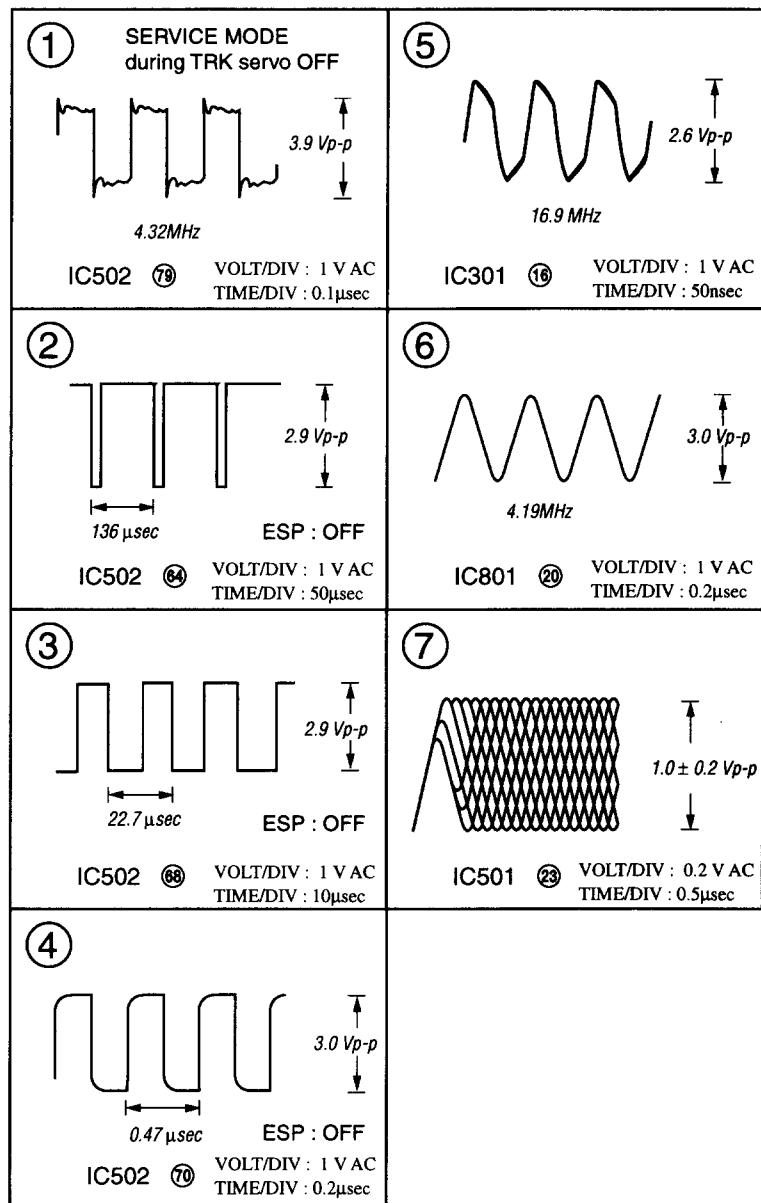


● EXPLODED VIEWS

Page 28

Ref. No.	Former Type		New type		Remark
	Part No.	Description	Part No.	Description	
8	X-4948-042-1	LID ASSY, UPPER (METALLIC BLUE) (E301: EXCEPT US,CND)	X-4948-042-1	LID ASSY, UPPER (METALLIC BLUE) (E301: EXCEPT US,CND,AUS)	Changed
8	X-4948-063-1	LID ASSY, UPPER (METALLIC BLUE) (E305: EXCEPT US,AUS)	X-4948-063-1	LID ASSY, UPPER (METALLIC BLUE) (E305: EXCEPT US,AUS,C&SA)	Changed
8	X-4948-064-1	LID ASSY, UPPER (METALLIC BLUE) (E305: US,AUS)	X-4948-064-1	LID ASSY, UPPER (METALLIC BLUE) (E305: AUS)	Changed
8	X-4948-065-1	LID ASSY, UPPER (GOLD) (E305: EXCEPT US,AUS)	X-4948-065-1	LID ASSY, UPPER (GOLD) (E305: EXCEPT US,AUS,C&SA)	Changed
8	X-4948-176-1	LID ASSY, UPPER (SILVER) (E301:US,CND)	X-4948-176-1	LID ASSY, UPPER (SILVER) (E301:US,CND,AUS)	Changed
8	X-4948-177-1	LID ASSY, UPPER (GOLD) (E301:US,CND)	X-4948-177-1	LID ASSY, UPPER (GOLD) (E301:US,CND,AUS)	Changed
8	X-4948-178-1	LID ASSY, UPPER (BLUE) (E301:US,CND)	X-4948-178-1	LID ASSY, UPPER (BLUE) (E301:US,CND,AUS)	Changed
8	X-4948-179-1	LID ASSY, UPPER (SILVER) (E301: EXCEPT US,CND)	X-4948-179-1	LID ASSY, UPPER (SILVER) (E301: EXCEPT US,CND,AUS)	Changed
8	X-4948-180-1	LID ASSY, UPPER (SILVER) (E305:US,AUS)	X-4948-180-1	LID ASSY, UPPER (SILVER) (E305:AUS)	Changed
8	X-4948-181-1	LID ASSY, UPPER (SILVER) (E305: EXCEPT US,AUS)	X-4948-181-1	LID ASSY, UPPER (SILVER) (E305: EXCEPT US,AUS,C&SA)	Changed
8	X-4948-182-1	LID ASSY, UPPER (SILVER) (E307CK: US,CND,AUS)	X-4948-182-1	LID ASSY, UPPER (SILVER) (E307CKT,C307CK : US,CND,AUS)	Changed
8			X-4948-893-1	LID ASSY, UPPER (SILVER) (E305:US)	Added
8			X-4948-894-1	LID ASSY, UPPER (SILVER) (E305:C&SA)	Added
8			X-4948-900-1	LID ASSY, UPPER (GOLD) (E305:C&SA)	Added
8			X-4948-901-1	LID ASSY, UPPER (METALLIC BLUE) (E305:C&SA)	Added
22	4-986-065-01	SPRING, TORSION	4-986-065-01	SPRING, TORSION (US,CND,AUS)	Changed
			4-992-843-01	SPRING, TORSION (EXCEPT US,CND,AUS)	Added

● WAVEFORMS



# D-E300AN/E301/E305/ E307CK/E307CKT

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**SONY®**

## SERVICE MANUAL

*US Model*

*D-E300AN/E301/E305/E307CK/E307CKT*

*Canadian Model*

*D-E300AN/E301/E307CK*

*AEP Model*

*UK Model*

*D-E300AN/E301/E305/E307CK*

*Australian Model*

*E Model*

*Chinese Model*

*D-E301/E305/E307CK*

*Tourist Model*

*D-E305*

## SUPPLEMENT - 2

File this Supplement with the Service Manual.

**Subject :**

- **MODEL ADDITION (D-E305 : Tourist model)**  
(Refer to original service manual (9-923-150-11) and supplement-1 (9-923-150-82) previously issued for the other information.)
- **CHANGE OF MAIN BOARD**

(ECN-CD750822)

## ● MODEL ADDITION

Tourist model has been added for D-E305.

D-E305 (Tourist model) is approximately same as the D-E305 (E33 model).

Consequently, only difference between Tourist model and E33 model are listed.

## ● DIFFERENCE PARTS LIST

### ACCESSORIES & PACKING MATERIALS

**Page 33 – 34**

- Abbreviation

JEW : Tourist

<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>	<u>Remark</u>
△	1-467-550-11	ADAPTOR, AC (AC-E455A) (E33, JEW)	
	1-528-541-11	BATTERY PACK (BP-DM10) (JEW)	
△	1-569-007-11	ADAPTOR, CONVERSION 2P (E33, JEW)	
	3-861-668-01	MANUAL, INSTRUCTION (JEW) (JAPANESE)	
	3-861-668-11	MANUAL, INSTRUCTION (JEW) (CHINESE)	
	3-861-668-21	MANUAL, INSTRUCTION (JEW) (ENGLISH)	
	3-861-668-31	MANUAL, INSTRUCTION (JEW) (KOREAN)	

The components identified by mark △ or dotted line with mark △ are critical for safety.  
Replace only with part number specified.

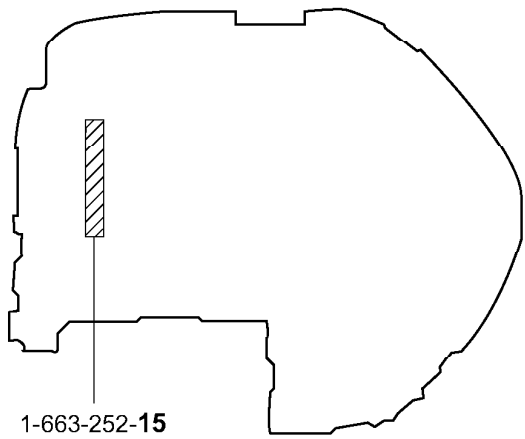
Les composants identifiés par une marque △ sont critiques pour la sécurité.  
Ne les remplacer que par une pièce portant le numéro spécifié.

● **CHANGE OF MAIN BOARD**

The main board have been changed.  
Printed wiring board and schematic diagram of new type, and changed parts list are described in this Supplement-2.  
Refer to original service manual (9-923-150-11) and supplement-1 (9-923-150-82) previously issued for the other information.

**NEW TYPE IDENTIFICATION**

[MAIN BOARD] (Side B)



● **CHANGE OF ELECTRICAL PARTS LIST**

**MAIN** (Service Manual see page 30 to 31)

Ref. No.	Former Type						New Type						Remark
	Part No.	Description					Part No.	Description					
C309	1-126-783-11	ELECT	22uF	20%	16V		1-126-794-11	ELECT	4.7uF	20%	50V		Changed
C570	1-164-360-11	CERAMIC CHIP	0.1uF		16V								Deleted
C715							1-164-346-11	CERAMIC CHIP	1uF		16V		Added
Q509							8-729-028-97	TRANSISTOR	DTC114TUA-T106				Added
R548							1-216-845-11	METAL CHIP	100K	5%	1/16W		Added